

3.3

Angles Formed by Transversals

Goal Identify angles formed by transversals.

VOCABULARY

Transversal

Corresponding angles

Alternate interior angles

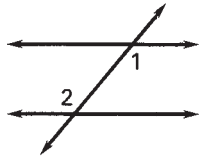
Alternate exterior angles

Same-side interior angles

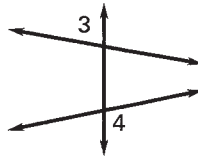
Example 1**Describe Angles Formed by Transversals**

Identify the relationship between the angles.

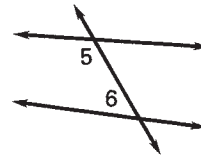
a. $\angle 1$ and $\angle 2$



b. $\angle 3$ and $\angle 4$



c. $\angle 5$ and $\angle 6$

**Solution**

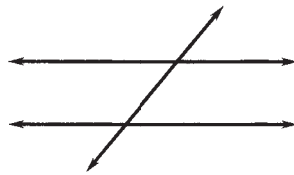
a. $\angle 1$ and $\angle 2$ are _____ angles.

b. $\angle 3$ and $\angle 4$ are _____ angles.

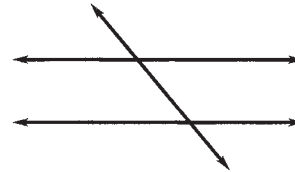
c. $\angle 5$ and $\angle 6$ are _____ angles.

Follow-Up On each diagram below, label the transversal t . Then label one pair of angles that fits the description.

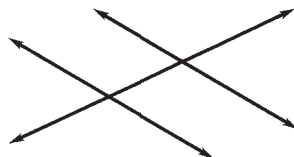
$\angle 1$ and $\angle 6$ are corresponding angles.



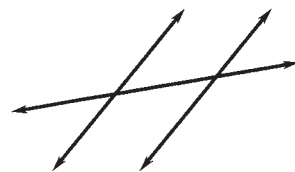
$\angle 2$ and $\angle 3$ are alternate exterior angles.



$\angle 4$ and $\angle 8$ are alternate interior angles.



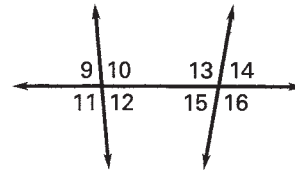
$\angle 5$ and $\angle 7$ are same-side interior angles.



Example 2**Identify Angles Formed by Transversals**

List all pairs of angles that fit the description.

- corresponding
- alternate exterior
- alternate interior
- same-side interior

**Solution**

- corresponding: $\angle 9$ and \angle ____, $\angle 10$ and \angle ____, \angle ____, and \angle ____, \angle ____, and \angle ____
- alternate exterior: $\angle 9$ and \angle ____, \angle ____ and \angle ____
- alternate interior: $\angle 10$ and \angle ____, \angle ____ and \angle ____
- same-side interior: $\angle 10$ and \angle ____, \angle ____ and \angle ____

Follow-Up

In Example 2, does a transversal intersect two parallel lines?

In the space at the right, draw two lines intersected by a transversal t .

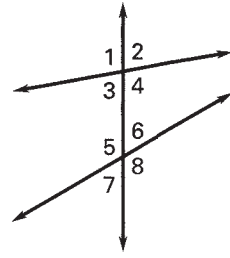
How many angles are formed?

Complete the table with the number of pairs of angles formed.

	Numbers of Pairs Formed
Corresponding angles	
Alternate exterior angles	
Alternate interior angles	
Same-side interior angles	

- ✓ **Checkpoint** Describe the relationship between the angles in the diagram below.

1. $\angle 2$ and $\angle 7$



2. $\angle 3$ and $\angle 5$

3. $\angle 1$ and $\angle 5$

4. $\angle 4$ and $\angle 5$

5. $\angle 4$ and $\angle 8$

6. $\angle 4$ and $\angle 6$